4.13 Unavoidable Adverse Impacts

A number of unavoidable adverse effects that would occur if the proposed action were implemented based on the analysis conducted for this document. Adverse impacts that cannot be avoided are described below. Each of these effects is discussed in detail in Sections 4.1 through 4.12. Many adverse effects would be avoided through mitigation. None of these effects are considered to be significant.

Meteorology/Air Quality

Temporary unavoidable adverse impacts would occur from dust production during the proposed construction, trenching, and transportation activities. Dust would be generated from vehicle movement over soil cleared of vegetation, trenching for pipeline installation, and materials transport. Vehicle and generator exhaust would also be emitted during construction and transport activities. Watering for dust suppression and use of vehicle cover during material transport would reduce dust emissions and emission controls would minimize vehicle exhaust. These unavoidable effects would be less than significant.

Geology/Soils and Mineral Resources

Building and pipeline construction requires 13.8 acres of vegetation clearing and surface grading. Temporary loss of vegetative cover will temporarily cause a minor increase in the potential for erosion. This is an unavoidable effect, but is less than significant.

Hydrology and Geothermal Resources

Effluent discharge will increase levels of mercury, arsenic, and boron in the Pit River. These contaminants will all be within permissible levels as determined by the Central Valley Regional Water Quality Control Board in the NPDES waste discharge conditional permit (Appendix C). Levels of these contaminants will be monitored as part of the permit conditions. This impact is adverse but not significant.

The production of up to 60 gpm of geothermal fluid would be an adverse but not significant impact.

Biological Resources

Construction of the pipeline will require vegetation clearing in jurisdictional wetlands. Temporary loss of 0.03 acres of wetland vegetation will cause an adverse and unavoidable effect; this effect would be mitigated by measure 4.4-1that requires that the wetland vegetation be replaced after construction is completed.

Mitigation measures will avoid unavoidable adverse effects to sensitive plant species. The discharge of the geothermal fluid to the Pit River will result in the bioaccumulation of mercury in fish, which is considered an adverse effect, but not significant. The increase in mercury consumption of bald eagles from eating the fish is considered adverse, but not significant.

Cultural Resources

Mitigation Measures 4.5-1, 4.5-2, and 4.5-3 would avoid adverse effects to cultural resources if they are encountered during surface disturbance to pipeline construction so they would then be less than significant.

Land Use

Construction will require some disturbance to land use in agricultural areas owned by the I'SOT Community. This adverse effect would be temporary in nature and implementation of measure 4.3-1 would reduce this effect to less than significant.

Noise

Activities such as vegetation clearing, surface grading, and construction would produce unavoidable and adverse noise during the 70-day construction period. Use of muffler devices on equipment as required under Mitigation Measure 4.7-1 would reduce noise emissions. Noise impacts during construction are expected to be significant but temporary, and would not affect receptors outside the I'SOT community.

Aesthetics

Construction activities for the pipeline would be close to existing county roads and will be visible to varying degrees from short-range viewpoints along these roads, depending on the amount of screening provided by trees at each site. The proposed action will also be visible to dispersed motorists passing by the construction on County Road 54 and State Route 299. The changes to viewsheds during construction would be adverse but temporary and not significant.

Transportation and Traffic

Construction of the buildings, distribution lines, and discharge pipeline will require approximately 30 vehicle trips per day maximum including movement of construction equipment during non-construction days. A temporary increase in traffic will cause an unavoidable effect to traffic along Highway 299 and County Roads 161, 82, and 83. This effect would be short in duration and less than significant. A potential exists for roadway damage during construction equipment movement and boring under Highway 299. The incorporation of Mitigation Measures 4.11-1, 4.11-2, 4.11-3, and 4.11-4 would reduce this potentially adverse effect.

Human Health & Safety

Operation of the pipeline provides potential for pipeline leakage into immediate surroundings. Implementation of Mitigation Measure 4.4-1 would minimize the potential for pipeline leakage. If an accident caused the pipeline to break or leak, the effect would be adverse and temporary. Monthly monitoring as required by Mitigation Measure 4.3-2 and immediate repair of detected leaks as required under Mitigation Measure 4.12-6 would reduce adverse impacts of potential pipeline leaks to less than significant levels.

EFFECTS OF THE ALTERNATIVES

If the project were not constructed due to lack of DOE funding, there would be no adverse effects from Alternative B, the "No Action" alternative; however, the project could proceed without DOE funding contingent upon alternative funding, with effects from Alternative A potentially worse without DOE participation because no mitigation would be required (except NPDES required items). Without funding by DOE, I'SOT would not be reimbursed for costs resulting from permitting efforts, engineering consultation, and system installation costs. No data gathering system would be installed for DOE research and development (R&D) purposes.